SURFACE TRANSPORTATION BOARD

DECISION

Docket No. EP 290 (Sub-No. 4)

RAILROAD COST RECOVERY PROCEDURES—PRODUCTIVITY ADJUSTMENT

Digest:[1] Each year the Board calculates the change, if any, in the rail industry's productivity, i.e., how efficiently railroads move freight. This figure is calculated by comparing year-to-year the average cost of producing a unit of railroad output. Here, the Board adopts a tentative productivity adjustment for the change in railroad productivity for the 2011-2015 averaging period, and invites comments on the approach taken.

Decided: February 13, 2017

The Board is tentatively adopting 1.020 (2.0% per year) as the measure of average (geometric mean) change in railroad productivity for the 2011-2015 (five-year) period. This represents an increase of 0.6% from the average for the 2010-2014 period.

The provisions of 49 U.S.C. § 10708(a) direct the Board to publish, at least once each quarter, a rail cost adjustment factor (RCAF).[2] The provisions of 49 U.S.C. § 10708(b) require that the quarterly RCAF be adjusted for long-run changes in railroad productivity. R.R. Cost Recovery Procedures—Productivity Adjustment, 5 I.C.C.2d 434 (1989). This long-run measure of productivity is computed using a five-year moving geometric average. Productivity Adjustment—Implementation, 9 I.C.C.2d 1072 (1993). The annual productivity calculations are typically routine and non-controversial.

This year's productivity adjustment, however, was affected by a change in the way distances are measured. One of the inputs in the calculation—yearly change in revenue ton-miles—is derived from the Board's annual Waybill Sample, which itself is provided to the Board by a contractor, Railinc Corporation (Railinc). In previous years, Railinc utilized a sub-contractor, ALK Technologies Inc. (ALK), to perform the miling phase of the Waybill Sample contract. Because a waybill does not provide the route that a shipment took, in prior years,

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[1] The digest constitutes no part of the decision of the Board but has been prepared for the convenience of the reader. It may not be cited to or relied upon as precedent. Policy Statement on Plain Language Digests in Decisions, EP 696 (STB served Sept. 2, 2010).

[2] The RCAF is an index of railroad input prices that is published by the Board on a quarterly basis. See, e.g., Quarterly Rail Cost Adjustment Factor, EP 290 (Sub-No. 5) (2016-1) (STB served Dec. 18, 2015).

distances were determined by ALK, using a mathematical model that predicted the most likely route of the move. For 2015, the Federal Railroad Administration, with the Board acting in an advisory capacity, awarded the contract to Railinc. Under the new contract, Railinc no longer utilized ALK and altered the approach for determining distances by using actual location data derived from electronic signals associated with where the railcars for a shipment had actually been. The process allows Railinc to more closely approximate the route the car actually was reported to have taken. As a result of this new methodology, the distances—and thus the yearly change in revenue ton-miles that are used to compute the productivity adjustment—should prove to be more precise.

Upon receiving the 2015 Waybill Sample data, the Board compared the distances derived from the new approach versus the old approach and found that the distances that result from actual location data appear to be generally shorter than the calculated mileages assigned in previous years. As a result of the change in approach, however, the aggregate number of revenue ton-miles used as an input to the productivity adjustment will be smaller than would have been the case with the prior modeling approach.

Because this change in methodology could unfairly skew the 2015 productivity adjustment, the Board has developed a "linking factor" to account for this general change in distances. The ideal way to create such a linking factor would be to compute productivity based on the new way of measuring distance and the previous way of measuring distance using the same input data, and to then create a ratio between the two measures that would normalize the distance measure between 2014 and 2015. But because the Board does not have data showing what the distances would be for 2015 movements using the older approach, that cannot be used here. However, the Board was able to achieve the same end by comparing similar moves in 2014 and 2015, measuring the distance for each, determining the difference between the two, and using these differences to create a linking factor.

To create the linking factor, the Board has looked at moves that were local to one railroad, and then matched movements based on the following four variables: origin station, destination station, railroad, and standard transportation commodity code. Those matches, which covered over 70% of the shipments, were then used to link the 2014 and the 2015 Waybill Sample records. The Board calculated average miles, weighted by tons, for 2014 and 2015. Looking at the percentage change in weighted average miles, the Board found a reduction in distance that averaged 5.2%. The 2015 ton-miles were then adjusted upwards by a linking factor to compensate for the 5.2% reduction so that a proper comparison to the 2014 ton-mile value could be made.[3]

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[3] The linking factor is calculated as $1/(1-5.2\%)$. Because productivity is calculated from looking at the change from one year to the next, the linking factor used here would only be needed for the 2015 productivity adjustment. Starting with the 2016 productivity adjustment, the Board will be comparing two years of revenue ton-mile figures, both based on the new approach for calculating distance.

Applying this adjustment, the Board's calculation of the productivity change for the year 2015 is 1.070, based on changes in input and output levels from 2014, which represents an increase of 5.2% from the rate of productivity growth in 2014 relative to 2013 (1.018). Incorporating the 2015 value with the values for the 2011-2014 period produces a geometric average productivity growth of 1.020 for the five-year period 2011-2015, or 2.0% per year. As the new geometric mean was computed by replacing the 2010 figure of 1.037 with the larger figure of 1.070 for 2015, there was an increase of 0.6% in the geometric mean from last year's value. A discussion of how the Board calculates productivity is contained in the Appendix to this decision.

Because of the unique circumstances of this year's productivity adjustment calculation, the Board is making its productivity adjustment tentative at this time to allow public comment on this approach and to hold a technical conference with interested parties and Board staff. That conference will be held on February 28, 2017, at 10:00 AM, in the Board's Hearing Room at 395 E Street, S.W., Washington, DC 20423-0001. This conference will be available on the Board's website by live video streaming. To access the conference, click on the "Live Video" link under "Information Center" at the left side of the home page beginning at February 28, 2017, at 10:00 AM.

In submitting comments, the Board especially encourages input on any potential data or computational errors in the approach taken in its calculations. Any party proposing a different estimate of productivity growth based on data or computational errors must, at the time it files comments, furnish the Board with one set of detailed workpapers and documentation underlying its calculations. The same information must be made available to other parties upon request.

The tentative productivity adjustment adopted in this decision will become effective on March 1, 2017. The Board will take further action, as appropriate, to determine whether the tentative productivity adjustment is final or requires modification after reviewing any comments received.

It is ordered:

1. Comments are due by March 16, 2017; replies are due by April 5, 2017.

2. An original and 10 copies must be filed with:

United States Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423-0001

3. Comments and replies must be served on all parties appearing on the current service list.

4. A technical conference in this proceeding is scheduled for February 28, 2017, at 10:00 AM, as discussed above. Interested persons are invited to attend.

5. Notice of this decision will be published in the Federal Register.

6. This decision adopting a tentative productivity adjustment is effective on March 1, 2017.

By the Board, Board Members Begeman, Elliott, and Miller.

APPENDIX

The following is a description of the methodology currently used to calculate the RCAF productivity adjustment.[4] The annual rate of productivity change is calculated by dividing an output index by an input index.

The input index uses constant dollar-adjusted expenses. The inputs in this index—freight expenses, fixed charges, and contingent interest—are stated on a constant dollar basis using the most recent year available as the base, and updating the base by the Series Rail Cost Recovery (RCR) Index published by the Association of American Railroads. Freight expenses, fixed charges, and contingent interest were obtained from railroad Annual Report (Form R-1) data. The 2015 Total Expense Constant Dollars for each of the six years was calculated by dividing a given year's RCR index value into the RCR index values for 2015 (493.3) and then multiplying that ratio by the Total Expense Unadjusted. The calculation of the input indices and values used are shown in Table A.

The 2015 output index was developed from the costed Waybill Sample, a commonly used data source. The costed Waybill Sample excludes movements lacking sufficient information for the application of unit costs.

Using the costed Waybill Sample as a base, each movement is assigned to one of the 189 segments or categories used to develop the output index. Segmentation is based on three mileage blocks, seven car types, three weight brackets, and three shipment sizes. The output index is a composite of the year-to-year change in ton-miles for each of the 189 segments weighted by each segment's base-year share of total revenues.

The change in productivity is calculated by dividing the output index by the input index. The multi-year average for the period 2011-2015 is calculated by taking a geometric mean, which was found to be 1.020 (2.0% per year). The input index, the output index, the annual productivity change, and the calculation of the 2011-2015 average are shown in Table B.

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[4] The development and application of the productivity adjustment is explained in Railroad Cost Recovery Procedures—Productivity Adjustment, 5 I.C.C.2d 434 (1989).

Table A
Calculation of Input Indices
2010-2015

Year	Total Expense Unadjusted (000s) (1)	RCR Indices 2010-2015 (2)	Total Expense Constant Dollars (3)	Input Index Column (3) 2011/2010 etc (4)
2010	43,763,629	465.1	46,417,111	
2011	50,243,494	513.7	48,248,230	1.039
2012	51,464,512	526.8	48,191,807	0.999
2013	52,366,102	526.3	49,082,649	1.018
2014	54,753,917	531.0	50,866,492	1.036
2015	49,465,606	493.3	49,465,606	0.972

Table B
Comparison of Output, Input, and Productivity
2011-2015

Year	Output Index (1)	Input Index (2)	Productivity Change Col (1)/Col (2) (3)
2011	1.041	1.039	1.001
2012	1.007	0.999	1.008
2013	1.022	1.018	1.004
2014	1.055	1.036	1.018
2015	1.041	0.972	1.070
Productivity Change Five-Year Moving Avg			1.020

The five-year (2011-2015) productivity trend calculated using a geometric average is 1.020, or 2.0%. Note that there are changes in some of the individual numbers in Table A and Table B compared with corresponding years in an earlier decision. R.R. Cost Recovery Procedures—Productivity Adjustment, EP 290 (Sub-No. 4) (STB served Mar. 4, 2014). These changes represent the revisions to the R-1 submitted by the railroads which were first incorporated into our 2008-2012 productivity study. None of the changes are large enough to affect the five-year moving geometric average calculated in previous decisions.